The Digital Image in Photographic Culture

In The Photographic Image in Digital Culture, Rubinstein explains that Rubinstein explains that photography is used to represent memory, and that time can be explored directly through the incomparability of record and memory. According to Rubinstein (2013, p.24), 'photography is an image of time in crisis, produced by the overlapping temporalities that constitute multiple and simultaneous timelines". Humans cannot exist in the hierarchical space of Cartesian geometry and can only see moments in fragmented time. Photography, however, can act as an archive of memory, recording and presenting the behavioural changes that occur throughout the passage of time from a four-dimensional perspective. The experimental process is a photographic record of the changes that occur in the passage of time in a variety of objects around us. Using different materials as separate units of time measurement, the photography records the changes over time and the trajectories left by the passage of time in the same space. By speeding up the documentary film to show the wasted time.

Rubinstein, D., Sluis, K. (2013). 'The Digital Image in Photographic Culture: Algorithmic Photography and the Crisis of Representation', The Photographic Image in Digital Culture. London: Routledge. pp.22-40.

Camera Lucida: Reflections on Photography

Photography is considered one of the most effective ways of recording time, as it freezes some fragments of the past in place of one's memory. According to Latour (1982, p.5), " the photograph mechanically repeats what could never be repeated existentially." One can never repeat the experience of past time, yet it can be repeatedly viewed through photography. Therefore, there is a continuity between the time when the video was recorded and when it was viewed. This connection reinforces the similarity between photography's ability to preserve footage and the human ability to remember footage. The connectedness of behaviour across time dimensions has inspired me. In my project, I used photography as a medium for temporal measurement, documenting the neglected changes in the experimental material over time. At the same time, the static posters are presented in AR, where the passage of time is played repeatedly—calling on people to cherish time and pay attention to the passage of time and the changes in things around them.

Latour, B. (1986). 'Visualisation and Cognition: Drawing Things Together', Knowledge and Society Studies in the Sociology of Culture at Present, Vol. 6. pp.1-40.

Extended critical analyses: Tide

Almond presented his time-related installation at the Royal Academy of Arts 'Earth: Art of a Changing World' exhibition in 2008. The installation consists of 567 digital wall clocks, controlled by two GM5 modular master clocks, which allow all the clocks to be fully synchronised and turned over together. The work uses clocks for time measurement, which is based on authoritative units of measurement. The pressure of the passage of time on the viewer is immense as the numbers of the clocks simultaneously change to the next number as they enter the gallery. This is because the work magnifies the existence of time, presenting the viewer with a concrete and exaggerated view of the changes in an invisible thing, time. It also slows down the passage of time with a minute-by-minute change, leaving you waiting for a minute in anticipation of the next jump of the clock. This work uses visual impact to bring the pressure of the passage of time to the viewer's face. In my initial experiment, I tried to place Almond's context for the way time is measured in my experiment to record the melting of an ice cube. As the camera recorded the changes in the ice, I discovered that the melting of ice is a long-term process. At the same time, ice melting is subject to many variable conditions, even if an authoritative clock cannot measure the experiment.

Christian Marclay uses sundials, hourglasses, floor clocks, pocket watches, flashing microwave LEDs and other authoritative and non-authoritative measuring times in The Clock. Rather than measuring time, they are units of measuring time. Different units of measurement can keep track of time by their unique survival time TTL, just as a dripping tap can measure time according to the rhythm of the dripping water. Similarly, materials such as ice also have their unique way of measuring time. Before clocks were commonly used, people used non-authoritative units of measurement such as a stick of incense or an hourglass to calculate time. The changes in these non-authoritative units were slow and unnoticeable, so I focused on the changes in the things around me that people did not easily notice. I experimented with different materials such as ice, candles and scented lamps as a non-authoritative unit of time, recording the subtle changes that occur over time.

The time-lapse method of recording not only speeds up the presentation of the passage of time but also visually forces attention to the passage of time and the subtle changes in things around us. Therefore, in the last iteration of the experiment, I used AR (Augmented Reality) to present the passage of time. When the poster is scanned using AR, the changes that occur throughout the experiment are shown in the form of a dynamic video. The combination of the static posters and the dynamic AR approach allows the viewer to feel a more immersive sense of time passing unnoticed around them. This work intends to make people aware of the passage of time and the changes around them, cherish time more and pay more attention to the changes in people and events around them.

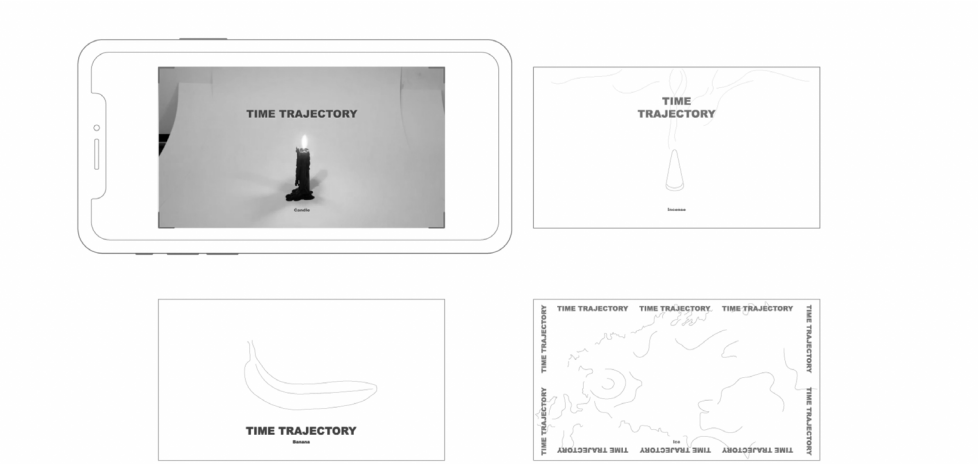
Almond, D. (2008). Tide. Royal Academy of Arts 'Earth: Art of a Changing World' exhibition.

Extended critical analyses: The Digital Image in Photographic Culture

In The Photographic Image in Digital Culture, Rubinstein explains that photography can be used to represent memory. In contrast, photography can directly explore time through the incomparability of record and memory. According to Rubinstein(2013, p.24), photography presents images in which multiple timelines co-exist but constantly replace each other. Since humans cannot exist in the hierarchical space of Cartesian geometry, they can only see moments in fragmented time. Photography can therefore act as an archive of memory, recording and presenting the behavioural changes that occur throughout the passage of time from a four-dimensional perspective. The process of photography is a process of experience plus memory, and the recording ends with the presentation of a whole continuum of images. When we look back at the recording process, we are also looking at the passage of time from the dimension of time in four dimensions.

The temporal dimension of the four dimensions serves as a new perspective that allows for a macro overview of the passage of time and the resulting temporal trajectory. According to Heraclitus,' you cannot step into the same river twice '. The passage of time is a continuous state and irreversible, so many moments cannot be archived. As Barthes states, photography reproduces time in a way that we can never repeat. Therefore, there is a certain connection between the time when the video was recorded and the time when it was viewed. When the past is recorded and played back over and over again in rapid succession, the oppressiveness of the rapid passage of time is immense.

I began to change my perspective from studying the trajectory of time to focusing on the changes that occur over time in things around me that are easily overlooked. For example, fruit at home always starts to oxidise and decay without being noticed. When bananas become a unit of measurement, they produce a colour change over time. This process of object decay also questions our relationship with time and whether we become powerless in the face of its fleeting nature. Therefore, this project measures the passage of time by recording the subtle changes in different materials under the influence of time. During the project's experiments, the changes produced by ice, candles and incense as they melt and burn are a lengthy process. When this long process is sped up, this means that the speed of time passing is also sped up. When revisiting the neglected people or things around us, it becomes clear that time is rushing by in the blink of an eye. Therefore, the project is documented using time-lapse photography, which not only speeds up the presentation of the passage of time but also visually forces attention to the passage of time and the subtle changes in things around us.



Cubitt, S. (2011) 'Time to Live', ISEA International Symposium Proceedings, San Francisco, CA:Leonardo. Available at: www.leoalmanac.org/wp-content/uploads/2012/04/ISEA_proceedings-sean-cubitt.pdf. pp.8-15.

Positions Through Essaying

Routes on the climbing walls are differentiated by different colours. When established rules are broken, climbing routes become more diverse. As the climber's climbing movements are tracked and recorded, the interaction between the human body and the climbing wall creates a movement trajectory. So, the trajectory of movement becomes a position that I generate through iteration. In once exhibition, the interaction between a viewer and an interactive video work was recorded by chance. The dynamic behaviour of the body resulting from this interaction became the object of my continued iterative experimentation. I experimented with the use of lines to visualise the entire trajectory of movement.

According to Einstein's interpretation of the time dimension in four-dimensional space-time, humans cannot see the entire trajectory of an object, only the dynamics of the current second. However, if we cross the limits of time, we can imagine the whole trajectory, like this dynamic afterimage. So I tried to use a flip book to overlay the next second's movement before the previous second's movement. All the trajectories in the video are presented in the second of flipping through the flip book. This means going beyond the limits of time and presenting the trajectory of time in four dimensions.

Artist Almond's installation work Tide uses clocks to measure the passage of time, an approach based on authoritative units of measurement. I have tried to situate this contextualisation within my visual experiments exploring the trajectory of time, finding that different things have their own unique units of measurement that can be used to record time through their unique ways of being.

Before clocks were commonly used, people used non-authoritative units of measurement such as a stick of incense or an hourglass to count time, which came from changes in things around them that were not easily noticed. Therefore, measuring the passage of time in terms of non-authoritative units of measurement became the position that I produced through contextualizing. I have tried to use different materials such as ice, candles and incense as non-authoritative units of time measurement, recording the subtle changes in the different materials over a long period of time through time-lapse photography to measure the passage of time.

I use AR (Augmented Reality) to present the passage of time. When an image is scanned of a poster using AR, the changes in things over time are played back quickly as time-lapse photography. The process of photography is one of experience and memory, and when we look back at the entire recording, it also means that we are standing in the dimension of time in a four-dimensional space-time looking at the whole process of time passing. When the past is recorded in time-lapse photography and played back repeatedly and rapidly, the oppressiveness of the rapid passage of time is immense. The hope is that people will pay attention to the passage of time and the changes in things around them.

Is time determined by the length of time perceived by humans? There may be some connection between the measurement of a clock as an objective physiological time and perceived time. Is time a product of the consciousness, or is it a reality in itself, objective and associated with space? I am trying to visually present the trajectory of time per unit of time using a stick of incense and a candle as a unit of measurement for human perception of time. I am trying to create a unique set of timekeeping rules using simple visual experiments. According to Francisco's comment, I was doing more of an exercise in philosophical nihilism.

It is more effective to have a clear contextual setting for the project of time, rather than simply recording how time passes through different materials. Placing the subject in different contexts gives rise to different meanings, and even the same context can give rise to abstract or concrete questions that can be talked about. For example, Olafur's project ICE WATCH appears to be about the Arctic ice melting faster in other contexts. However, he was talking about the climate crisis of global warming. In my project, everyone has a different understanding of time. I have therefore tried to narrow down the perspective of time to the range of different eras, where representative cultural, linguistic, academic, spiritual, or behavioral products emerge, and even the tendency for the thinking of the times to guide the next era.

However, for my project, a certain period of time can be seen as a certain era, and the trajectory of time can be mapped as a product of a certain time. Zeitgeist refers to the general trends in the cultural, academic, scientific, spiritual and political aspects of a country or a group of people within a certain period of time. According to Hegel, art essentially reflects the culture of the time in which it was created. Thus the distinctive culture or artistic style developed in the context of different times and societies together build a distinctive Zeitgeist.

Everyone lives in a different time, and everyone has different knowledge and culture, so they will see these different things in different ways. Everyone has a different understanding of time, because everyone's calculation and judgement of time is subjective, in other words everyone has their own criteria for measuring time. Time is difficult to define precisely, but it can be broadly divided into two opposing aspects: subjective time and objective time. Subjective time is the time that people perceive, while objective time is measured by clocks and calendars. For people, the present time is made up of clocks and guides human behaviour. Time itself, however, does not exist and is a concept that cannot be seen or touched. Einstein said that "time is an illusion, only an illusion of perception". For everything that disappears into nothingness is something that changes, not time. Time is just a virtual unit of measurement of change in material space. Therefore time needs to be redesigned and redefined, not guided by clocks, but by the study of new systems of time and ways of living.

Positions Through Triangulating

When you wake up in the morning to your alarm clock, when you run to catch the bus to work, or when you look down at your hand while walking quickly into work, do you ever notice what is really pushing you, and what is limiting your movement? Is it time that is limiting you, or is it capitalism that is affecting you?

In article A Brief Economic History of Time, Thompson refers to capitalism's redefinition of the passage of time and its reset of time to restrict workers' work. They set this subjective perception of time into an objective existence and argue that defining time had a beneficial effect on workers' efficiency and economic development. (Thompson, 2016) Time moves with everyone every day and clocks are in everyone's life. Nowadays we use clocks to measure time, but how was time judged before clocks were invented? A long time ago, people measured time by the sun rising and setting in the west. People would go out to work when the sun rose and go home when it set. At the same time an incense burner was used to measure the time from the time it burned to the time it was extinguished. However, all these measures of time are non-authoritative, or subjective. It goes without saying that objective time is now clock time, so is objective time necessarily authoritative? Time is an illusion, an illusion of perception. Therefore, time itself does not exist, it is a virtual unit of measurement that we have created to measure changes in material space. As Thompson (2016) states, "the economy re-invented time". The Industrial Revolution has completely changed the way people measure, understand, feel, and talk about time. The time we are talking about is artificially set, and the objective time measured by clocks in life is also a subjective human construct. This artificially constructed objective time is not authoritative. In other words, subjective time is artificially set to exist as objective time by capitalism in its role of absolute power. So, can any subjective time exist as objective time under the action of absolute power?

Thompson felt that the regulation and setting of time provide a lot of convenience for life and work, and people are becoming more and more dependent on clocks. According to Thompson (2016), Taylor advocates in his productivity thesis that the use of clocks to mark the arrival times of workers maximises productivity and output. For capitalism, the definition and regulation of time is beneficial. Not only does it regulate the length of time workers work, but it promotes worker productivity and increases productivity. Along with Taylor's scientific management theory, the use of clocks and punching machines in the workplace also provided for productivity in factories. (2016) However, for the workers, the clocks set by capitalism undoubtedly became a restriction and a shackle for the workers. Capitalism regulates time and on the surface appears to be creating an objectively existing temporal order for the world. In fact, capitalism imposes its own subjective time on workers through absolute power, with the aim of satisfying its own interests and squeezing the productivity of workers to the vmaximum. In the same way, we can define the clock in a new way according to our own feelings about time. By designing our own subjective clocks through our personal definition and measurement of time, and fundamentally subvert this artificial creation of objective existence. This is what I am exploring in my own practice.

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Before the invention and widespread use of the modern clock, every great ancient civilisation has attempted to measure and define time, including the use of 'shadow clocks' or 'water clocks'. (Thompson, 2016) All these ways of measuring time were subjectively attempted through ancient people, and there is something uncritical and unobjective about them. My opposing view is that time is inherently subjective. Because time is invisible intangible etc., everyone has a different understanding of time. Invisible time can leave traces, shadows and sounds in visible things. In this project, I have experimented with the recording of time through a method of investigation and classification. The experiment leaves behind the objective existence of the clock and focuses on the subjective perception of the individual body. I measure time through the subjective feeling of the human body. In the experiment of measuring time, I found that cigarettes, another product of capitalism,

gave the exact opposite feeling. The worker will smoke to relax when his work is full of fatigue and stress. However, the addictive substances in cigarettes also physically push people to take their time. They can't help but light up the next cigarette when they become addicted. Addictive substances such as nicotine are also a drain on people's health and time of life. The experiment revealed that addictive substances affect the body's biological clock and that the body's physiological response to substances such as nicotine and caffeine is similar to the feeling of hunger and sleepiness. This biological clock, which is based on the body's perceptions, is more likely to express this state of absolute subjectivity.

Fortunately, on some points Thompson shares my view. Capitalism's act of defining subjective time as objective time is driven through absolute power. According to Thompson (2016), capitalism set time and changed mankind's perception of the passage of time. Under the absolute power of the British Empire, clocks were invented and perfected, the use of watches was introduced into society and the time set by capitalism gradually became an appendage of mankind. Absolute power thus plays a huge role in the process by which subjective time is defined as objective time. This absolute power not only symbolises a discourse that cannot be challenged, but also carries with it the compulsion of unconditional obedience.

By the same token, subjective time, as understood by everyone, can become an objective standard time in society if absolute power is brought to bear on it. Time is subjective, and each person can be the master of his own time and not be enslaved to others. Time is in each person's own hands and should be cherished.

In order to challenge the artificial creation of an objective existence by capitalism, I have created a 'call to action' by falsifying absolute power and publishing it. The subjective time defined through experimentation in my project was published in a publication symbolising absolute power for promotion, calling attention to one's own subjective time. Power is likewise an invisible and imaginary substance that cannot be seen or touched. But this power of nothingness can be presented in some official publications. Firstly, as a product of official news and information, newspapers are not only highly communicative, but are also given as a symbol of absolute power. Few people question or object to the veracity of the content of newspapers, and most even believe the information conveyed in them unconditionally. In addition, I found that in the early days of the new China, the government would produce a portable publication of the statements of the country's leaders for the dissemination of statements and ideas. This red pamphlet was called 'Hongbaoshu', meaning

'Red Treasure Book', by its supporters. This act of adherence is testimony to the extremely high position of power conferred on this publication. Not only was there unconditional trust, but the pamphlet was held up as a kind of spiritual pillar. This has parallels with capitalism's construction of objective time through absolute power, with workers' time being influenced by capitalist law in the early days. By the time the Fair Labour Standards Act created the working day and weekend, workers' time was still dominated by capitalism. (Thompson, 2016) Both the newspaper and the pamphlet are highly communicative and compulsive, and the information contained therein cannot be challenged, but only accepted under duress. Even the content of any information becomes unimportant in the face of absolute power, and we are only entitled to listen.

However, each person's subjective perception and judgement of time exists on a different scale. Capitalism makes people more efficient by changing and setting time, but people do not get pleasure and fulfilment from it. (Thompson, 2016) If the time is based on each individual's subjective time, this may lead to happiness and freedom, but it is also a challenge to each individual's ability to discipline himself or herself. Refusing to accept clock time and sticking to one's own subjective time may result in procrastination. It may be possible to be in control of one's own time, in control of reality, but we cannot transcend the rules and changes of time. So, can we find a state of equilibrium in the face of the two opposites of subjective time and objective time at the same time?

Thompson, D., 2016. A Brief Economic History of Time., The Atlantic.
Available at: https://www.theatlantic.com/business/archive/2016/12/a-brief-economic-history-of-time/510566/

synthesis

What is time? Time is relevant to us, but we never see time itself. There is some debate as to whether time is an objective fact or a subjective being. So how do we view time?

Einstein believed that time is an illusion, an illusion of perception. Things disappear into nothingness because they themselves are changing; one cannot see time passing. Because man exists as a four-dimensional being on an axis of time in four-dimensional space, he can only follow the passage of time. Almond judges time by the rotation and change of a clock and sees the passage of time when the number on the clock changes to the next number. Thompson refers to the redefinition of the passage of time by capitalism, which has reset the hours to restrict workers from working. We often judge the passage of time by our own biological clocks. The time consumed is calculated by the burning of an incense stick, or the time spent on a break is judged by a cup of coffee or a cigarette.

The interaction between the human body and the wall when climbing creates a trajectory of movement in the macroscopic perspective of time. However, in the perspective of the temporal dimension in four dimensions, the human movement changes across the boundaries of time always on a timeline that constantly overlaps the previous second. The changes in movement on this one axis of time form a temporal trajectory, which is like an overlapping dynamic residue. The time trajectory formed in the macroscopic view not only records the changes in the trajectory during movement, but also the passage and change of time.

Everyone had a different standard for measuring time, and when clocks and watches were not commonly used people used non-authoritative units of measurement such as a stick of incense or an hourglass to measure time. Similarly, sundials, ice cubes and candles were all used as a method of measuring time. Rather than measuring time, they were units for measuring time. Different units of measurement can keep track of time through their unique TTL of survival time, just as a dripping tap can also measure time according to the rhythm of the dripping water. Similarly, materials such as ice cubes have their own unique way of measuring time. I have attempted to use the different materials such as ice and candles as non-authoritative units of time measurement by recording the changes in the passage of time produced by the different materials over a long period of time. This non-authoritative unit of time acts as a subjective measure of time, demonstrating that time is subjective.

Time is invisible and intangible, but invisible time leaves traces, shadows and sounds in visible things. These three different aspects became the direction of my experiments on time recording. The experiment advocates leaving behind the objective existence of a clock and focusing on the subjective feeling of one's body to measure time. In my time measurement experiments, I discovered that the addictive substances in cigarettes not only affect the body's biological clock, but also consume people's health and time of life. The time between the end of the last cigarette and the next addiction can be used as a subjective unit of time, and each time a cigarette is lit can be used as a point in time. This biological clock, which is based on the body's feelings, shows that time is subjective. If time is subjective, then clock time is also subjectively constructed by humans before it is defined as objective time. In other words, subjective time is artificially set into existence as objective time by capitalism in its role of absolute power.

Therefore, absolute power plays a huge role in the process of defining subjective time as objective time. This absolute power not only symbolises a discourse that cannot be challenged, but also carries with it the compulsion of unconditional obedience. In summary, subjective time can become an objective standard time in a society where absolute power is at work.

Looking ahead to the next steps, I thought I'd start by conducting some analysis. What are the pros and cons of analysing the subjective versus objective nature of time respectively, and is absolute subjective time necessarily easier to control than objective time? If one focuses more on personal subjective time, one may have more control over personal time, but it is also a big challenge for self-control. We may be in control of time, but we cannot transcend the rules and changes of time. Therefore, in the face of the dichotomy between subjective and objective time, it is my next step to find a balance between the two, or to investigate what causes this dichotomy to arise.